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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,492	08/23/2005	Helmut Christian Eder	COCH-0144-US1	7344
22506 7590 03/22/2007 JAGTIANI + GUTTAG 10363-A DEMOCRACY LANE FAIRFAX, VA 22030			EXAMINER CHAN, RICHARD	
			ART UNIT 2618	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 03/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/526,492	Applicant(s) EDER ET AL.	
	Examiner Richard Chan	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 20, 22, 25, 30, 32, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Engebretson (US 5,016,280).

With respect to claim 20, Engebretson discloses the evoked neural response measuring device comprising: a first implanted subsystem, microphone 13, configured to provide stimulation to at least one desired section of an auditory nerve to said stimulation thereby obtaining a plurality of discrete values, using sample and hold circuit 61, collectively representing an unsaturated, high gain amplified version of the evoked neural response; and a second subsystem configured to reconstruct said plurality to discrete values into a continuous waveform using digital to analog converter 65. (Col.6 line 58-Col.7 line 11)

With respect to claim 22, Engebretson discloses the device of claim 20, wherein said second subsystem comprises: an integrator DAC 65 configured to reconstruct said plurality of discrete values into a continuous waveform. (Col.7 line 1-7)

Art Unit: 2618

With respect to claim 25, Engebretson discloses the method of measurement of an evoked neural response in a cochlear implant comprising: stimulating a desired section of an auditory nerve with earpiece 17 to elicit an evoked neural response; successively sampling the evoked neural response, with sample and hold circuit 61, of the auditory nerve at a plurality of intervals to obtain a plurality of discrete values collectively representing an unsaturated, high gain amplified version of the evoked neural response; and reconstructing said plurality of discrete values into a continuous waveform with digital to analog conversion circuit 65. (Col.6 line 58- Col.7 line 11)

With respect to claim 30, Engebretson discloses the method of claim 25, wherein reconstructing said plurality of discrete values into a continuous waveform comprises: integrating with DAC 65 said plurality of discrete values to obtain said continuous waveform. (Col.7 line 1-7)

With respect to claim 32, Engebretson discloses a device for measuring of an evoked neural response in a cochlear implant comprising: means for sampling the evoked neural response 17 of an auditory nerve at a plurality of intervals to obtain a plurality of discrete values with sample and hold circuit 61, collectively representing an unsaturated, high gain amplified version of the evoked neural response; and means for reconstructing said plurality of discrete values into a continuous waveform with digital to analog conversion circuit 65. (Col.6 line 58-Col.7 line 11).

Art Unit: 2618

With respect to claim 37, Engebretson discloses the device of claim 32, wherein said means for reconstructing said plurality of discrete values into a continuous waveform comprises: means for integrating using digital to analog converter 65 said plurality of discrete values to obtain said continuous waveform representing an amplified form of said evoked neural response. (Col.7 line 1-7)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 21, 23, 24, 26-29, 31, 33-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engebretson (US 5,016,280) in view of Seligman (US 6,151,400).

With respect to claim 21, Engebretson discloses the device of claim 20, wherein said first subsystem comprises: an electrode array 17 configured to stimulate said at least one desired section of the auditory nerve and to detect the value of a response of the desired auditory nerve section to said stimulation at successive time intervals; (Col.5

Art Unit: 2618

line 58-65) however Engebretson does not specifically disclose high gain amplifier having a reference voltage input configured to be set to a value of said evoked response at a first time, and a signal input configured to be set to a value of said evoked response at a second time subsequent to said first time, and wherein said amplifier is configured to amplify the difference in said evoked response between said first time and said second time.

The Seligman reference however discloses wherein an amplifier with a reference voltage V_{ref} obtained at a first time and a measured value V_r at a second time where a difference is taken between the 2 values. (Col.3 line 4-11)

It would have been obvious to one of ordinary skill in the art to implement the amplifier as disclosed by Seligman to the device of Engebretson in order to calculate the difference between the measured signal and the threshold an output a minimum value for the measured signal.

With respect to claim 23, Engebretson and Seligman combined disclose the device of claim 21, Seligman continues to disclose wherein said reference voltage V_{ref} input is configured to be set to a value of said evoked response at the commencement of each said time interval, and wherein said signal input is configured to be set to a value of said evoked response at end of each said interval. It is inherent that a voltage measured at a certain time will be compared to the reference voltage for each separate interval in order to calculate the voltage difference for each interval.

Art Unit: 2618

With respect to claim 24, Engebretson and Seligman combined disclose the device of claim 21, wherein said first subsystem comprises: a sample and hold circuit having an input from said electrode array configured to set the reference voltage of said amplifier equal to a present value of the evoked response at the commencement of each said interval.

With respect to claim 26, Engebretson discloses the method of claim 25, however Engebretson does not specifically disclose wherein sampling the evoked neural response at a plurality of intervals includes: successively altering a reference voltage of a high gain amplifier at the commencement of each sample interval such that each discrete value equals an amplified form of the voltage change in the evoked neural response over said interval.

The Seligman reference however discloses wherein a reference voltage is acquired and signal envelope is determined and calculated because of the detection of a new sample. (Col.3 line 4-11 and Col.3 line 29-49)

With respect to claim 27, Engebretson and Seligman combined disclose the method of claim 26, Seligman continues to disclose wherein each altering of said reference voltage comprises: setting said reference voltage equal to a present value of the evoked neural response at the commencement of each interval. (Col.3 line 30-45)

Art Unit: 2618

With respect to claim 28, Engebretson and Seligman combined disclose the method of claim 26, Seligman continues to disclose wherein each said sampling comprises: obtaining from a sensor at a first time a value representing the evoked neural response; setting a reference voltage, by calculating the signal envelope, (Col.3 line 33) of a high gain amplifier equal to said first value of the evoked neural response; obtaining from said sensor at a second time subsequent said first time a second value, input sample A1, (Col.3 line 30) representing the evoked neural response setting a signal input of said high gain amplifier equal to said second value of the evoked.

With respect to claim 29, Engebretson and Seligman combined disclose the method of claim 28, Seligman continues to disclose wherein setting the reference voltage of the high gain amplifier equal to said first value comprises: setting the reference voltage of the high gain amplifier equal to the present value of the evoked neural response at the commencement of each sample interval. (Col.3 line 29-46)

With respect to claim 31, Engebretson and Seligman combined disclose the method of claim 28, Engebretson continues to disclose wherein obtaining said first and second values comprises: utilizing one or more electrodes 13 of an electrode array of a cochlear implant to obtain said values. (Col.5 line 58-65)

With respect to claim 33, Engebretson discloses the device of claim 32, however Engebretson does not specifically disclose wherein said means for sampling the evoked

Art Unit: 2618

neural response at a plurality of intervals includes: means for successively altering a reference voltage of a high gain amplifier at the commencement of each sample interval such that each discrete value equals an amplified form of the voltage change in the evoked neural response over said interval.

The Seligman reference however discloses wherein the reference voltage is changed based on a new value sampled by the system and then a new reference voltage is applied to the system. (Col.3 line 4-11 and Col.3 line 29-46)

It would have been obvious to one of ordinary skill in the art to implement the amplifier as disclosed by Seligman to the device of Engebretson in order to calculate the difference between the measured signal and the threshold and output a minimum value for the measured signal.

With respect to claim 34, Engebretson and Seligman combined discloses the device of claim 33, Seligman continues to disclose wherein each means for altering said reference voltage comprises: means for setting said reference voltage equal to a present value of the evoked neural response. (Col.3 line 29-46)

With respect to claim 35, Engebretson discloses the device of claim 32, however Engebretson does not specifically disclose wherein each said means for sampling comprises: for obtaining from a sensor at a first time a first value representing the evoked neural response; means for setting a reference voltage of a high gain amplifier equal to said first value of the evoked neural response; means for obtaining from said

Art Unit: 2618

sensor at a second time subsequent said first time a second value representing the evoked neural response; means for setting a signal input of said high gain amplifier equal to said second value of the evoked neural response; means for amplifying with said high gain amplifier the voltage difference between the said first and said second values of the evoked neural response.

The Seligman reference however discloses wherein an amplifier with a reference voltage V_{ref} obtained at a first time and a measured value V_r at a second time where a difference is taken between the 2 values. (Col.3 line 4-11)

It would have been obvious to one of ordinary skill in the art to implement the amplifier as disclosed by Seligman to the device of Engebretson in order to calculate the difference between the measured signal and the threshold an output a minimum value for the measured signal.

With respect to claim 36, Engebretson discloses the device of claim 32, however Engebretson does not specifically disclose wherein said means for setting the reference voltage of the high gain amplifier equal to said first value comprises: for setting the reference voltage of the high gain amplifier equal to the present value of the evoked neural response at the commencement of each sample interval.

The Seligman reference however discloses wherein the reference voltage of the amplifier is calculated when a new input sample is obtained. (Col.3 line 29-46)

With respect to claim 38, Engebretson and Seligman combined disclose the method of claim 35, Engebretson continues to disclose wherein obtaining said first and second values comprises: utilizing one or more electrodes 13 of an electrode array of a cochlear implant to obtain said values. (Col.5 line 58-65)

Response to Arguments

5. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2618


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chan whose telephone number is (571) 272-0570. The examiner can normally be reached on Mon - Fri (9AM - 5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571)272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Chan
Art Division 2618
3/18/07

 3/19/07

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PRIMARY EXAMINER